2nd International Conference of Agora Paleobotanica
"A Congress in the Countryside"
Ariño (Teruel, Spain) 9-13th July 2013

Macrorrestos holocenos en el sector oriental del Sistema Central ibérico

Holocene macroremains in the eastern Iberian Central System

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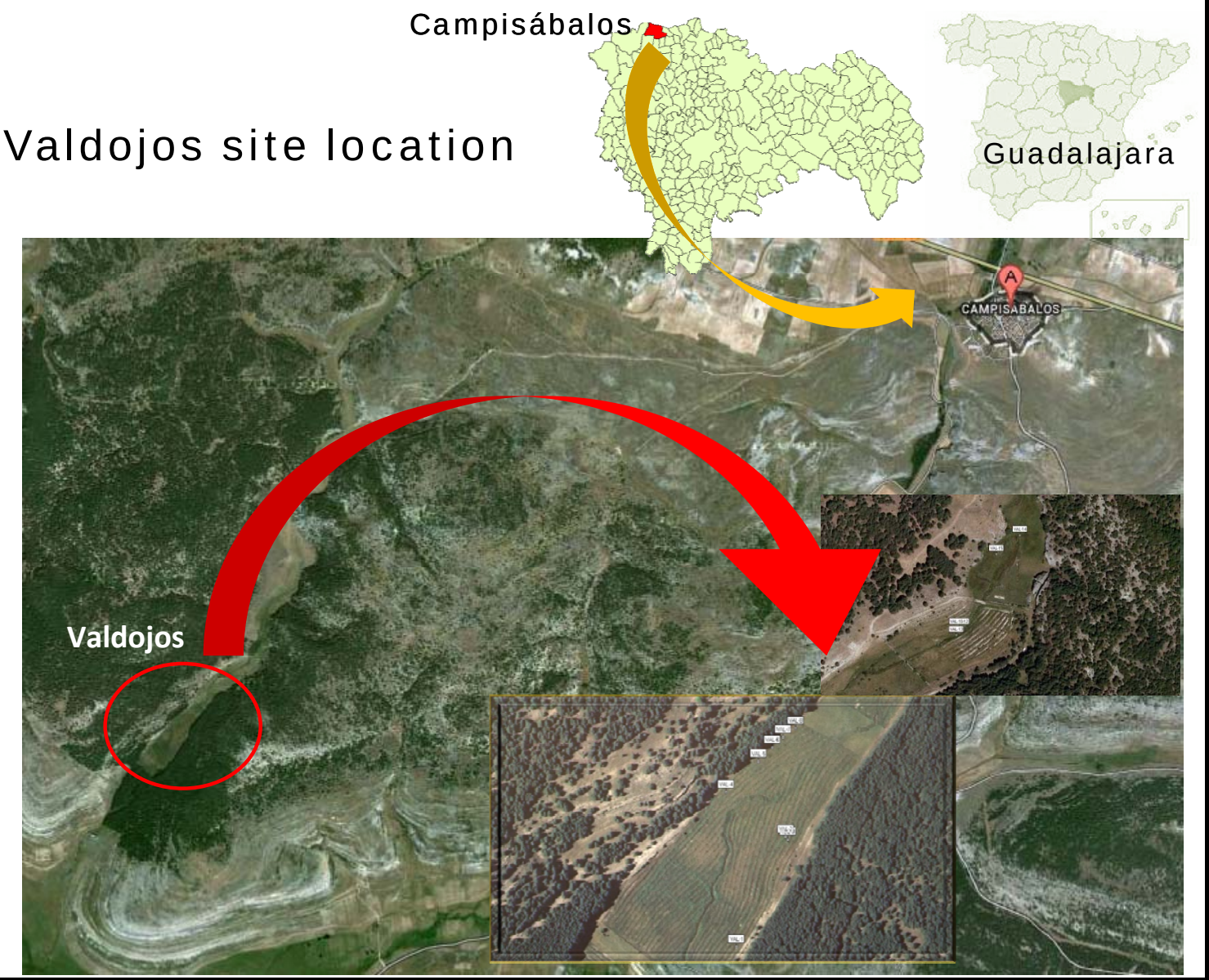
Valdojos site location



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Sampling

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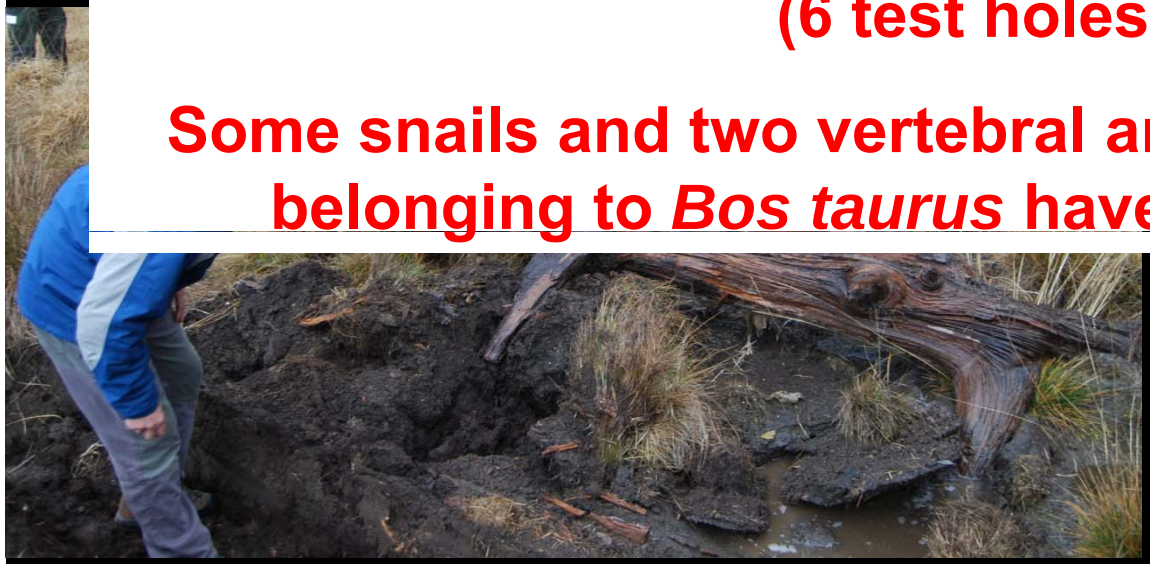
Sampling

A total of 50 samples of surface and underground trunks, branches and wood fragments were collected (6 test holes)

Some snails and two vertebral and metacarpal bones belonging to *Bos taurus* have also been found



Holocene macroremains in the eastern Iberian Central System

Methods

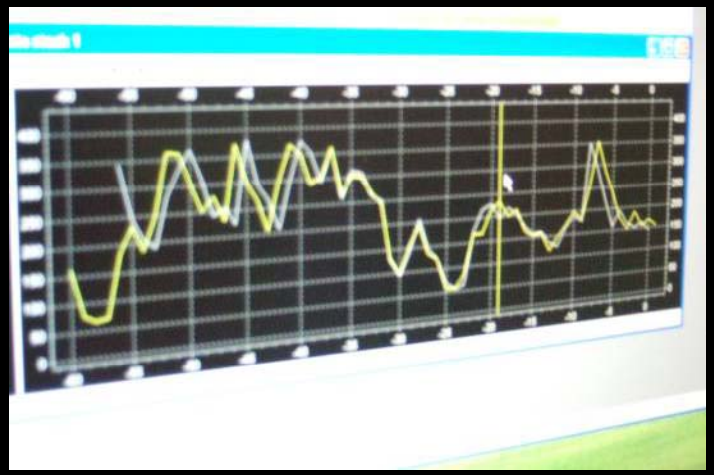
- Radiocarbon datation and calibration (Centre Queens, University of Belfast)

- Anatomical analysis to identify the taxa

- Dendrochronological analysis of larger samples

Dendrochronological analysis:

measuring tree rings and cross-dating growth series



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Preliminary results

Nº	Macroremain Type	Depth	Laboratory reference	Age*	Tree rings Nº / max radius
1	Fragments	Superficial	UBA-19753	225	-----
2	Fragments	Superficial	UBA-19752	241	-----
3	Trunk	Buried / 1,5 m	UBA-22236	6360	385/ 12 cm
4	Trunk and fragments	Buried/ 1 m	UBA-22238	6380	146/ 9 cm
5	Trunk	Superficial	UBA-19751	6580	184/ 17 cm
6	Trunk	Superficial	UBA-22239	6580	275/ 9 cm
7	Trunk and fragments	Superficial	UBA-22235	6620	258/ 19 cm
8	Trunk and fragments	Superficial	UBA-22247	6635	137/ 10,3 cm
9	Trunk and fragments	Superficial	UBA-22234	7455	188/ 9,5 cm
10	Fragments	Buried/ 4 m	UBA-22242	8195	-----
11	Fragments	Buried/ 2,9 m	UBA-22244	8270	-----
12	Fragments	Buried/ 3,6 m	UBA-22241	8310	-----
13	Fragments	Buried/ 3,1 m	UBA-22237	8515	-----
14	Fragments	Buried/ 4,2 m	UBA-22240	8835	-----
15	Fragments	Buried/ 3,7 m	UBA-22243	9985	-----

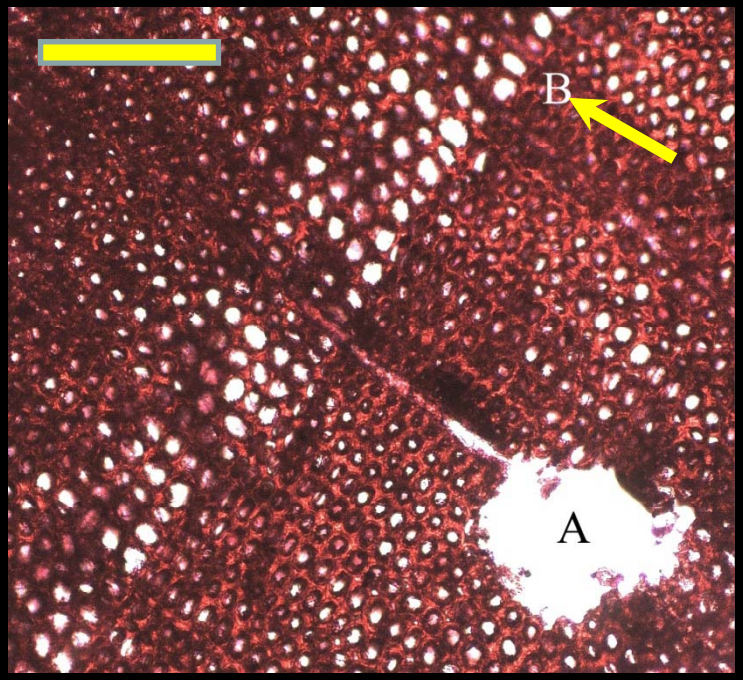
* The dates were expressed as 2 sigma calibrated years BP and assigned to the most probable year using the median probability

1. Dating: 15 samples have been dated, seven of them were collected from the surface and eight samples from the six test holes

Almost all the dated samples ranging from 6,300 to 10,000 calibrated years BP

Altogether representing the oldest Holocene plant macroremains of the Central System

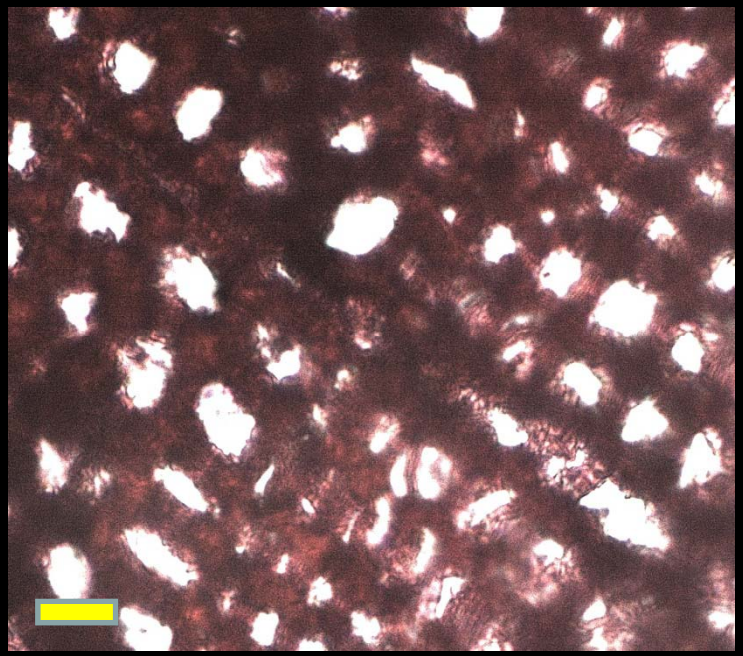
2. Anatomical analysis



Physiological longitudinal resiniferous channel located in the summer wood (A).

Growth rings easily identifiable (B).

Val70, **Transversal Section; Scale bar = 100 µm.**



Tracheids with polygonal cross section but compressed due to taphonomical processes.

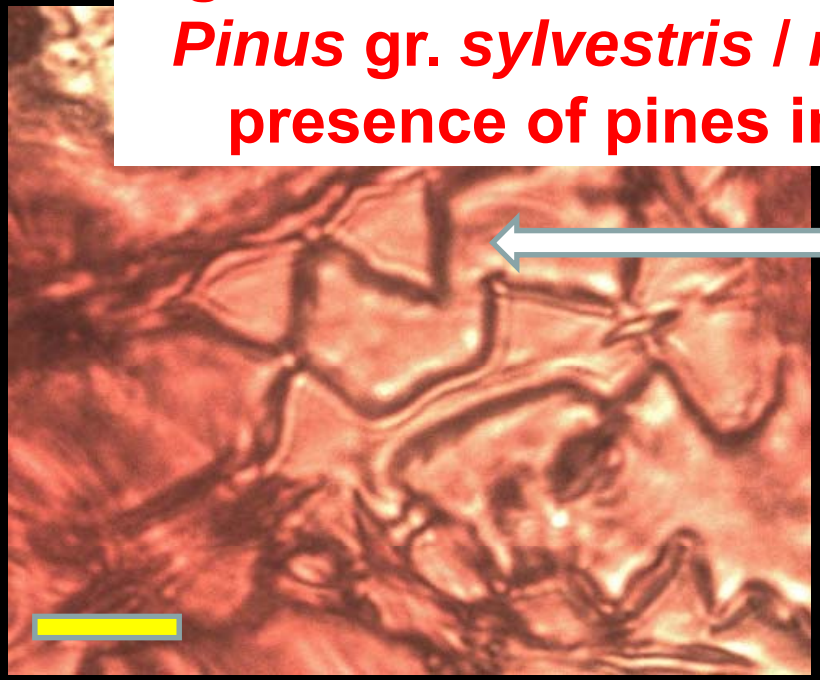
Val70, **Transversal Section; Scale bar = 20 µm.**

2. Anatomical analysis

Cross-fields from parenchyma cells to tracheids with one large window-like pit

Val27, Radial Section, Scale bar= 30 µm

The analyzed remains have been ascribed to the genus *Pinus* and some have been determined as *Pinus* gr. *sylvestris* / *nigra*, confirming the natural presence of pines in the territory for millennia



conspicuous and sharp dentations reaching the center of the lumen

Val27, Radial section Scale bar= 10 µm

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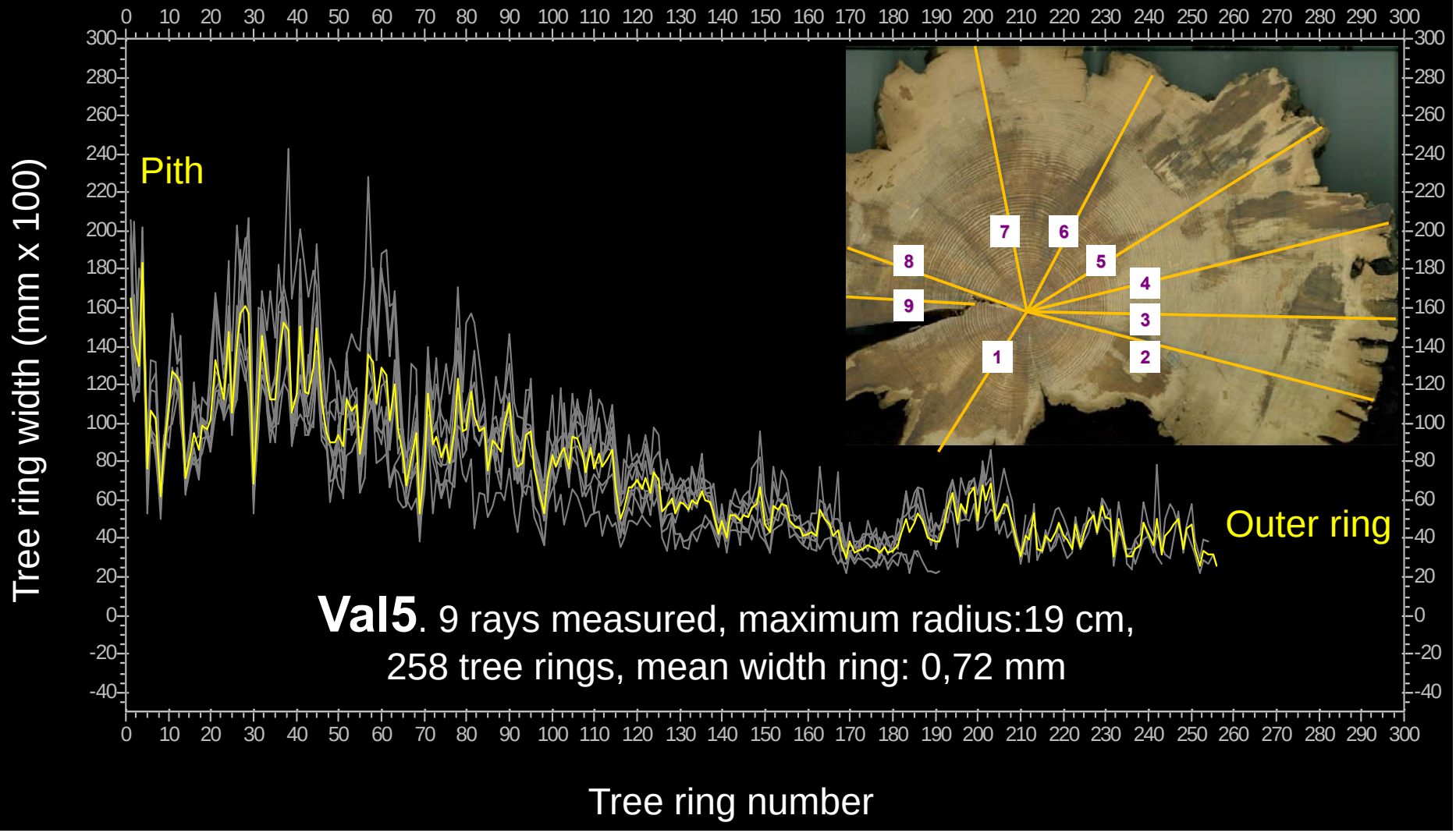
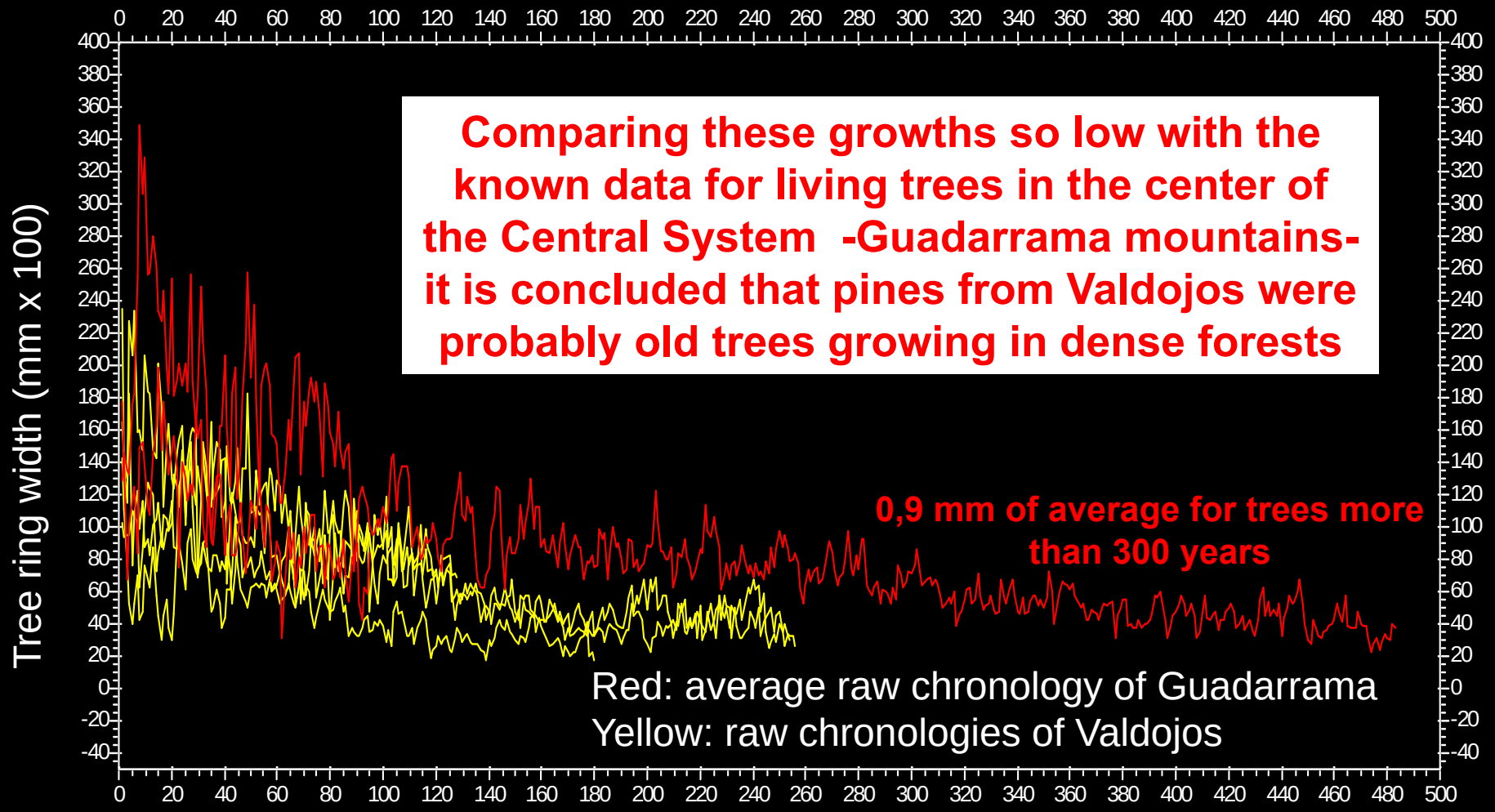
3. Dendrochronological analysis



Val5. 9 rays measured, maximum radius:19 cm,
258 tree rings, mean width ring: 0,72 mm

3. Dendrochronological analysis

Comparing these growths so low with the known data for living trees in the center of the Central System -Guadarrama mountains- it is concluded that pines from Valdojos were probably old trees growing in dense forests



Acknowledgements: to Rufino García, Carlos Morla and Efrén Hernández. We greatly appreciate the information and support provided by Joaquín Castelo, Gregorio Cerezo and Juan Pablo Santo Domingo de Marcos. Our thanks also to government of Castilla-La Mancha and the landowners. This work was supported by the Project DINECOFOR (CGL2011-27229).

Thank you for your attention